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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2017-0667; Product Identifier 2016-SW-053-AD; Amendment 39-19281; AD 2018-10-06]

RIN 2120-AA64

Airworthiness Directives; Bell Helicopter Textron Canada Limited (Bell) Helicopters

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: We are adopting a new airworthiness directive (AD) for Bell Model 407 helicopters. This AD requires repetitive inspections of the tail rotor (TR) driveshaft segment assemblies and a torque check of the TR adapter retention nuts. This AD was prompted by a report of an in-flight failure of the TR drive system. The actions of this AD are intended to detect and correct an unsafe condition on these products.

DATES: This AD is effective June 25, 2018.

The Director of the Federal Register approved the incorporation by reference of a certain document listed in this AD as of June 25, 2018.

ADDRESSES: For service information identified in this final rule, contact Bell Helicopter Textron Canada Limited, 12,800 Rue de l'Avenir, Mirabel, Quebec J7J1R4; telephone (450) 437-2862 or (800) 363-8023; fax (450) 433-0272; or at http://www.bellcustomer.com/files/. You may review the referenced service information at the FAA, Office of the Regional Counsel, Southwest Region, 10101 Hillwood Pkwy., Room 6N-321, Fort Worth, TX 76177. It is also available on the internet at http://www.regulations.gov by searching for and locating Docket No. FAA-2017-0667.

Examining the AD Docket

You may examine the AD docket on the internet at http://www.regulations.gov by searching for and locating Docket No. FAA-2017-0667; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this AD, the Transport Canada AD, any incorporated-by-reference service information, the economic evaluation, any comments received, and other information. The street address for Docket Operations (phone:

800-647-5527) is U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

FOR FURTHER INFORMATION CONTACT: David Hatfield, Aviation Safety Engineer, Safety Management Section, Rotorcraft Standards Branch, FAA, 10101 Hillwood Pkwy, Fort Worth, TX 76177; telephone (817) 222-5110; email david.hatfield@faa.gov.

SUPPLEMENTARY INFORMATION:

Discussion

On July 7, 2017, at 82 FR 31535, the Federal Register published our notice of proposed rulemaking (NPRM), which proposed to amend 14 CFR part 39 by adding an AD that would apply to Bell Model 407 helicopters. The NPRM proposed to require repetitively inspecting each TR driveshaft segment assembly for rotational and axial play between the adapter and the TR driveshaft. The NPRM also proposed a one-time verification of the installation torque of each adapter retention nut. The proposed requirements were intended to detect a loose TR driveshaft splined connection, which if not corrected could result in wear in the splines, failure of the TR drive system, and subsequent loss of directional control of the helicopter.

The NPRM was prompted by AD No. CF-2016-21, dated July 7, 2016 (AD CF-2016-21), issued by Transport Canada, which is the aviation authority for Canada, to correct an unsafe condition for Bell Model 407 helicopters. Transport Canada advises that a Model 407 helicopter experienced in-flight failure of the TR drive system, which resulted in loss of directional control. According to Transport Canada, the splines connecting the adapter part number (P/N) 406-040-328-105 to the shaft assembly P/N 407-040-330-107 were “severely worn and no longer capable of performing their function.” The investigation revealed other Model 407 helicopters with the same axial and radial play or looseness of some splined connections. AD CF-2016-21 states that these parts should be clamped together with threaded fasteners with no detectable looseness. Transport Canada advises that undetected looseness at the splined connection could result in wear of the parts and eventual loss of directional control of the helicopter.

For these reasons, AD CF-2016-21 requires a repetitive inspection of the TR driveshaft assemblies for play and a one-time torque verification of the TR adapter retention nuts.

Since the NPRM was issued, the FAA's Aircraft Certification Service has changed its organization structure. The new structure replaces product directorates with functional divisions. We have revised some of the office titles and nomenclature throughout this Final rule to reflect the new organizational changes. Additional information about the new structure can be found in the Notice published on July 25, 2017 (82 FR 34564).

Comments

After our NPRM was published, we received comments from two commenters.

Request

Westwind Helicopters questioned the need for the AD. In support, it stated that the AD inspections are identical to the periodic and progressive inspections in the Bell maintenance manual and to the one-time inspection in Bell Alert Service Bulletin (ASB) 407-16-113, dated February 12, 2016 (ASB 407-16-113). The commenter noted the AD would result in multiple documentation requirements for operators for the same maintenance item. The commenter did not request a change to the AD.

We partially agree. The commenter is correct that the AD may result in additional documentation. However, while an operator may incorporate the procedures described in the Bell

maintenance manuals and ASB into its maintenance program, not all operators are required to do so. In order for the inspections to become mandatory, and to correct the unsafe condition identified in the NPRM, the FAA must issue an AD.

Bell requested that a statement be added to the AD that accomplishing the Bell ASB meets the intent of the AD and that no further action is required.

We partially agree. Operators may take credit for inspections previously accomplished in accordance with ASB 407-16-113 under paragraph (d) of the AD. However, we disagree that no further action is required because this AD requires repetitive inspections of the TR driveshaft, whereas ASB 407-16-113 specifies a one-time inspection.

FAA's Determination

These helicopters have been approved by the aviation authority of Canada and are approved for operation in the United States. Pursuant to our bilateral agreement with Canada, Transport Canada, its technical representative, has notified us of the unsafe condition described in its AD. We are issuing this AD because we evaluated all information provided by Transport Canada, reviewed the relevant information, considered the comments received, and determined the unsafe condition exists and is likely to exist or develop on other helicopters of these same type designs and that air safety and the public interest require adopting the AD requirements as proposed.

Related Service Information Under 1 CFR Part 51

We reviewed ASB 407-16-113, which specifies procedures for inspecting the TR driveshaft assemblies for noticeable rotational or axial play between each adapter and TR driveshaft. ASB 407-16-113 also specifies procedures for performing a torque check of each TR adapter retention nut on the four TR driveshaft segments.

This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

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Costs of Compliance

We estimate this AD affects 667 helicopters of U.S. Registry. We estimate that operators will incur the following costs in order to comply with this AD. At an average labor rate of $85 per work-hour, inspecting the TR driveshaft segments and adapters for play requires about 1 work-hour, for a cost per helicopter of $85, and a cost of $56,695 to the U.S. fleet per inspection cycle. Determining the torque of the four adapter retention nuts requires about 3 work-hours for a cost per helicopter of $255 and a cost of $170,085 to the U.S. fleet.

If required, repairing a worn driveshaft adapter would require about 3 work-hours, and required parts cost about $1,259, for a cost per helicopter of $1,514.

Replacing an adapter retention nut requires about 1 work-hour, and required parts cost are negligible, for a cost of $85 per helicopter and $56,695 for the U.S. fleet per inspection cycle.

Authority for This Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: “General requirements.” Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices,

methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on helicopters identified in this rulemaking action.

Regulatory Findings

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

(1) Is not a "significant regulatory action" under Executive Order 12866;

(2) Is not a "significant rule" under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979);

(3) Will not affect intrastate aviation in Alaska to the extent that it justifies making a regulatory distinction; and

(4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

We prepared an economic evaluation of the estimated costs to comply with this AD and placed it in the AD docket.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

Adoption of the Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

PART 39–AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

2018-10-06 Bell Helicopter Textron Canada Limited (Bell): Amendment 39-19281; Docket No. FAA-2017-0667; Product Identifier 2017-SW-053-AD.

(a) Applicability

This AD applies to Bell Model 407 helicopters, certificated in any category.

(b) Unsafe Condition

This AD defines the unsafe condition as a loose tail rotor (TR) driveshaft splined connection, which if not corrected could result in wear in the splines, failure of the TR drive system, and subsequent loss of directional control of the helicopter.

(c) Effective Date

This AD becomes effective June 25, 2018.

(d) Compliance

You are responsible for performing each action required by this AD within the specified compliance time unless it has already been accomplished prior to that time.

(e) Required Actions

For helicopters with less than 4,000 hours time-in-service (TIS), within 100 hours TIS, and for helicopters with 4,000 or more hours TIS, within 50 hours TIS:

(1) Inspect each TR driveshaft segment assembly for rotational and axial play between the adapter and the TR driveshaft at the four positions depicted in Figure 1 of Bell Alert Service Bulletin (ASB) 407-16-113, dated February 12, 2016 (ASB 407-16-113). If there is any axial or rotational play, remove the adapter from the TR driveshaft segment assembly and inspect the adapter, washers, and TR driveshaft for damage. Replace the adapter retention nut and apply a torque of 30 to 50 inch-pounds (5.7 to 7.9 Nm). Replace any part with damage or repair the part if the damage is within the maximum repair damage limitations.

(2) Determine the torque of each TR adapter retention nut at each of the four segment assembly positions depicted in Figure 1 of Bell ASB 407-16-113. If the torque is less than 30 inch-pounds (5.7 Nm), remove the adapter from the TR driveshaft segment assembly and inspect the adapter, washers, and TR driveshaft for damage. Replace the adapter retention nut and apply a torque of 30 to 50 inch-pounds (5.7 to 7.9 Nm). Replace any part with damage or repair the part if the damage is within the maximum repair damage limitations.

(3) Repeat the actions specified in paragraph (e)(1) of this AD at intervals not to exceed 330 hours TIS.

(f) Special Flight Permits

Special flight permits are prohibited.

(g) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Safety Management Section, Rotorcraft Standards Branch, FAA, may approve AMOCs for this AD. Send your proposal to: David Hatfield, Aviation Safety Engineer, Safety Management Section, Rotorcraft Standards Branch, FAA, 10101 Hillwood Pkwy., Fort Worth, TX 76177; telephone (817) 222-5110; email 9-ASW-FTW-AMOC-Requests@faa.gov.

(2) For operations conducted under a 14 CFR part 119 operating certificate or under 14 CFR part 91, subpart K, we suggest that you notify your principal inspector, or lacking a principal inspector, the manager of the local flight standards district office or certificate holding district office, before operating any aircraft complying with this AD through an AMOC.

(h) Additional Information

The subject of this AD is addressed in Transport Canada AD No. CF-2016-21, dated July 7, 2016. You may view the Transport Canada AD on the internet at http://www.regulations.gov in Docket No. FAA-2017-0667.

(i) Subject

Joint Aircraft Service Component (JASC) Code: 6510 Tail Rotor Drive Shaft.

(j) Material Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) Bell Alert Service Bulletin 407-16-113, dated February 12, 2016.

(ii) Reserved.

(3) For Bell service information identified in this AD, Bell Helicopter Textron Canada Limited, 12,800 Rue de l'Avenir, Mirabel, Quebec J7J1R4; telephone (450) 437-2862 or (800) 363-8023; fax (450) 433-0272; or at http://www.bellcustomer.com/files/.

(4) You may view this service information at FAA, Office of the Regional Counsel, Southwest Region, 10101 Hillwood Pkwy, Room 6N-321, Fort Worth, TX 76177. For information on the availability of this material at the FAA, call (817) 222-5110.

(5) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call (202) 741-6030, or go to: http://www.archives.gov/federal-register/cfr/ibr-locations.html.

Issued in Fort Worth, Texas, on May 7, 2018.
Lance T. Gant,
Director, Compliance & Airworthiness Division,
Aircraft Certification Service.